

Claims

1. Device for storing, mixing, and dispensing components, comprising means for mixing a first component (27, 71) with
5 a second, liquid component (28, 72) and for dispensing the mixed material, characterized in that the individual components (27, 28, 52, 71, 72) are disposed in respective containers (2, 3, 44; 61, 62) that are arranged side by side and a closure or a connecting channel is selectively
10 provided in the transfer area (7, 74) between the outlet area (26) of the container (3, 62) for storing the second, liquid component (28, 72) and the liquid inlet (25, 78) of the container (2, 61) for storing the first component (27, 71).
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2. Device according to claim 1, characterized in that the means for mixing comprise a mixing arrangement (6, 64) arranged in the container (2, 61) for the first component (27) that is separated from the dispensing means (4, 63) for
20 the mixture (27 + 28; 71 + 72) and comprises a mixing rod (9, 65) with a mixing member (11, 67) that is movable back and forth and rotatable in the container.
3. Device according to claim 2, characterized in that the
25 mixing member is a mixing disk (11, 67) that is perforated and/or provided with peripheral cutouts.
4. Device according to claim 2 or 3, characterized in that the mixing rod (9) comprises a predetermined breaking
30 point (12, 59).
5. Device according to claim 1, characterized in that in the transfer area (7, 74) a valve assembly (8, 73) is arranged in order to selectively provide the closure or
35 connection.

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6. Device according to claim 5, characterized in that the valve assembly (8) is a valve cap (17) that is removably attachable to the enclosure bottom (53, 54) of the
5 containers (2, 3) for the first and the second, liquid component and comprises two pairs of plugs (21, 22) of which one pair are solid plugs (21) and the other pair (22) are plugs that are connected to each other by the connecting channel (24), the valve cap being attachable such that the
10 plugs either leave open or interrupt the connection in the transfer area (7).

7. Device according to claim 6, characterized in that the valve cap (17) comprises a plug arrangement (19) of the
15 solid (21) and the interconnected (22) plug pairs that is arranged reversibly with respect to the cap enclosure (18).

8. Device according to claim 5, characterized in that the valve assembly (73) comprises a three-way valve having a
20 rotary ring (100) with a circular internal groove (112) extending over a part of the circumference that allows to selectively connect one bore (109) in the common inlet/outlet portion (107) to one of the inlets/outlets (104, 105) of the containers (61, 62), or both
25 inlets/outlets (104, 105) of the containers to each other, or to close all inlets/outlets.

9. Device according to claim 8, characterized in that the three-way valve comprises a valve body (81) having a
30 fastening portion (76) arranged on its container side and the rotary ring (100) secured to its outlet side.

10. Device according to any one of claims 1 to 9, characterized in that the first component is a powdery,
35 granular, or porous material (27, 71).

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11. Device according to any one of claims 1 to 10 for mixing under vacuum, characterized in that at its inlet end (36), the container (3) for the second, liquid component
5 comprises a section having a greater diameter (D2) than the diameter (D1) of the rest of the container.

12. Device according to any one of claims 1 to 11, characterized in that the piston (14, 68) for the second,
10 liquid component (28, 62) is either actuated by a thrust rod (15, 69) or movable by negative pressure.

13. Device according to any one of claims 1 to 12, characterized in that the thrust rod (69) is loose and
15 capable of being pushed in between the underside of the turning knob (66) of the mixing rod (66) and the piston (63) of the powder container (61) in order to be able to dispense the mixture by means of the mixing rod.

20 14. Device according to claim 13, characterized in that the piston side end of the loose thrust rod (69) and the thrust rod side end of the piston (68) are so designed that the thrust rod can be coupled to the piston in order to apply traction to the latter, and uncoupled therefrom in
25 order to remove it after use.

15. Device according to any one of claims 1 to 14, characterized in that the common inlet/outlet portion (107) of the valve assembly (73) is provided with a coupling
30 accessory (94, 95) or element (108) that allows the connection of a syringe or another part.

16. A device for storing, mixing, and dispensing components, comprising means for mixing a first component
35 (27) with a second, liquid component (28) and for dispensing

the mixed material, characterized in that the individual components (27, 28) are disposed in respective containers (2, 3) that are arranged side by side and a valve assembly (8) is provided in the transfer area (7) between the outlet area (26) of the container (3) for storing the second, liquid component (28) and the liquid inlet (25) of the container (2) for storing the first component (27), the device (42) comprising at least another container (44) for a liquid component (52) and the outlet (48) for the mixture composed of the first component and the second, liquid component from container (2) and the outlet (49) for the additional liquid component (52) being provided with a common closure (55), and the two outlets (48, 49) forming a common coupling (47) for a mixer (30) or an accessory.

17. Device according to any one of claims 1 to 16, characterized in that the containers (82, 83; 91, 83, 97) are in the form of singulated parts that can be assembled.

18. Device according to claim 17, characterized in that the first container (82, 91) comprises a retaining flange (84, 92) with one or two part(s) (85; 93, 94) extending beyond the container and provided with circular bead(s) (86; 95, 96) for receiving the second (83) or the second and third containers (83, 97), the outlets (90, 98) of the other containers (83, 97) being adapted to be pushed through openings (89, 89A, 89B) in the outlet flange (87, 98) of the first container (82, 91).

19. Device according to any one of claims 1 to 18, characterized in that the outlet flange of the containers (2, 3; 61, 62, 82, 83; 91, 97, 83) is provided with coded bayonet coupling means (16, 20; 18A; 77, 88; 88A, 88B, 88D).

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20. Mixing arrangement for a container (2; 61) of a dispensing device, characterized in that the mixing arrangement is guided by the dispensing means (4, 63) for the mixture (27 + 28; 71 + 72) and comprises a mixing rod
5 (9, 65) with a mixing member (11, 67) that is movable back and forth and rotatable in the container.

21. Valve assembly (73) for a dispensing device having two containers, characterized in that the assembly is designed
10 as a three-way valve and comprises a rotary ring (100) with a circular internal groove (112) extending over a part of the circumference, that allows to selectively connect one bore (109) in the common inlet/outlet portion (107) of the valve assembly to one of the inlets/outlets (104, 105) of
15 the containers (61, 61) or both inlets/outlets (104, 105) of the containers to each other, or to close all inlets/outlets.

22. The valve arrangement of claim 21, characterized in
20 that the three-way valve comprises a valve body (81) having a fastening portion (76) arranged on its container side and the rotary ring (100) secured to its outlet side.

23. The valve arrangement of claim 22, characterized in
25 that the fastening portion (76) comprises coded bayonet coupling means (77) or snap-on connecting means.

24. The valve arrangement of claim 21, characterized in
30 that the three-way valve comprises a valve body having a snap-on connection arranged on its container side and the rotary ring arranged on its outlet side.

25. A method for conditioning and dispensing a mixture of a first component and a second, liquid component by means of
35 a device of any one of claims 1 to 15, 17, 18, characterized

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in that the second, liquid component is introduced into the first component and subsequently mixed therewith in order to be dispensed through the outlet of the container of the first component.

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26. A method for conditioning and dispensing a mixture of a first component and at least a second, liquid component by means of a device of claim 16, characterized in that the second, liquid component is introduced into the first
10 component via the connecting channel and subsequently mixed therewith, and the mixture is dispensed along with a third, liquid component through a mixer or accessory that is connected to the outlet of the container of the first component and to the outlet of the third, liquid component.

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27. A method for conditioning and dispensing a mixture of a first component and a second, liquid component by means of a device of claim 8, characterized in that the second, liquid component is aspirated into the liquid container (62)
20 via the common inlet/outlet portion (107), the valve assembly is adjusted such that both inlets/outlets (104, 105) of the containers (61, 62) are connected to each other for transferring the liquid to the powder container, the valve assembly is adjusted such that the outlets are closed
25 and the mixture is mixed by means of the mixing arrangement, and then the valve assembly is adjusted such that the mixture can be dispensed or that a third component or second liquid can be introduced into the liquid container.

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